SVS 7 SERIES LIFT

INSTALLATION MANUAL

SVS, INC. *Lifting Your Image*

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SVS 7 SERIES LIFT

INSTALLATION INSTRUCTIONS

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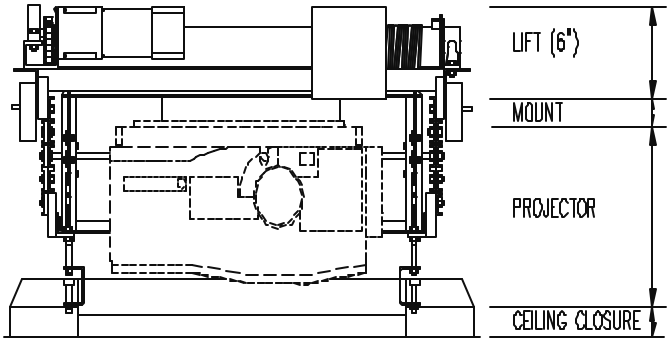
SVS 7 SERIES LIFT

GENERAL DESCRIPTION:

The SVS 7 Series Lift is designed to support projectors up to 26" Wide (66 cm) and features lowering distances ranging from 9' (2.7m) to 22'6" (6.9m). This model is an ideal solution for residential or commercial A/V applications with restricted ceiling clearance since the projector is installed between the scissors.



FEATURES:

MAXIMUM LOWERING DISTANCES: SVS 7-9 LIFT: 9'0" (2.7 m) SVS 7-11 LIFT: 11'3" (3.4 m) SVS 7-13 LIFT: 13'6" (4.1 m) SVS 7-15 LIFT*: 15'9" (4.8 m) SVS 7-18 LIFT*: 18'0" (5.5m) SVS 7-20 LIFT*: 20'3" (6.2m) SVS 7-22 LIFT*: 22'6" (6.9 m) * Cable Retractor Included	**LIFT'S HEIGHT IN CLOSED POSITION:** 16" (40.6 cm) 17.5" (44.5 cm) 19" (48.3 cm) 20.5" (52.1 cm) 22" (55.9 cm) 23.5" (59.7 cm) 25" (63.5 cm) Note: Lift only- accessories and supporting structure not included- Projector's height may also affect lift's height.
STORAGE, SHOW, SERVICE POSITIONS	Projector can easily be: - Aesthetically stored above the ceiling when not in use - Automatically positioned for show/operation - Easily lowered to floor level for service
LIFTING CAPACITY	Up to 700 Lbs (317.52 Kg.)
LIFT'S WEIGHT	From 165 Lbs (75 Kg.)
MAXIMUM PROJECTOR SIZE	26" Wide (66 cm)
LOW VOLTAGE CONTROLLER	Supplied with 75' (22.86 m) of cable (22 g./9 conductor).
PRECISION GROOVED DRUM	Accurate, level tracking for consistent screen image
PATENTED FAIL SAFE DRUM LOCK SYSTEM	Insures safety in the event of mechanical failure. 100% safety record after 14+ years of manufacturing
QUIET AND STRONG MOTORS	Extra quiet for meetings and presentations or simply for home use.
REDUNDANT LIMIT SWITCHES (UP AND DOWN)	For secure and safe motor shutdown.
CABLE MANAGEMENT SYSTEM	Keep cables and cords out of the way during operation.

PLEASE READ THROUGH ALL INSTRUCTIONS (INCLUDING ACCESSORY INSTRUCTIONS) BEFORE PROCEEDING.

This lift is designed to be used with a remote control unit, either automatically or manually controlled and will function without any special training in the "show position". The lift is supplied with a key switch and can be left in the "show", "auto" or "off" position for normal operation. The "service" position must be used only by trained technical personnel when the lift is lowered to floor level for service/access. Normal safety requirements of handling heavy equipment must be followed.

1. PRELIMINARY INSTALLATION CHECKS:

- The support structure should hold at least four (4) times the weight of the lift and projector combined. **Always follow the building codes.**

- Required space, lift support, and necessary cabling (i.e. low voltage control lines, audio/video control and power supplies) should be considered or installed prior to the lift installation.

- Do not install the projector on the lift until the lift, hardware and any other accessories have been properly installed and operational.

- This lift has been adjusted at factory with cables tightly packed on the drum and leveled for precise tracking, prior to being shipped from SVS Factory. Do not remove the lift's shipping blocks until instructed to do so (see Section 4-6). SVS scissor lifts are shipped in a slightly open position to eliminate stress on the limit switches and to maintain a tight cable pack on the drum. If physical height measurements are taken before the blocks are removed from the lift, they may not accurately reflect the actual measurement of the lift in a closed position.

- All weight attached to the lift must be centered between the lift's cables. The balance point of the projector (also called center of gravity or lens face to base box center) should be placed in line with the cables (+ /- 1").

- For ease of installation, lift can be hoisted into ceiling location with blocks and tackle or by using a ratchet puller.

- As a reminder, clear all persons and obstructions from the lift's path during its operation. Keep fingers and other objects away from the scissors and other moving parts. Technical Personnel should always be present whenever the lift is in a service mode.

2. CONSIDERATIONS FOR THE PLACEMENT OF THE LIFT:

- Before beginning the installation, check the dimensions of the projector to be mounted against the available space within the lift. Be sure to include the lens or any accessories which may add to the overall dimensions of the projector **.** To be used with the 7 Series lift, the projector cannot be more than 26" Wide (66 cm)**– see figure 1 & 2a and 2b.**

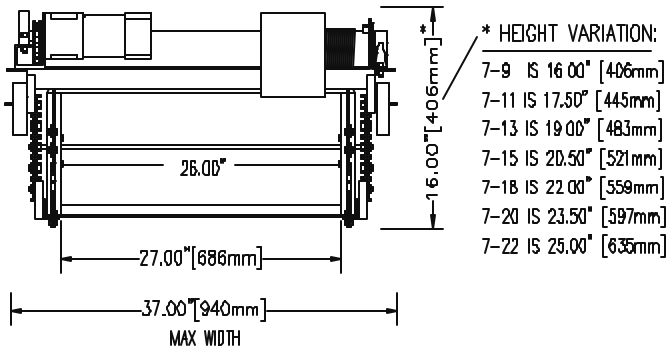


Figure 1. (Front View)

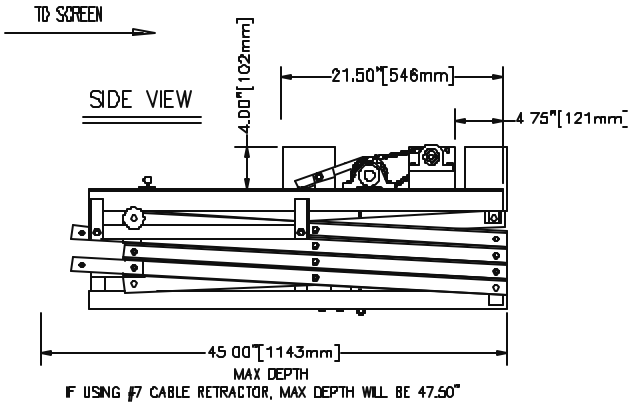


Figure 2a. (Side View)- SVS 7-9, 11, 13

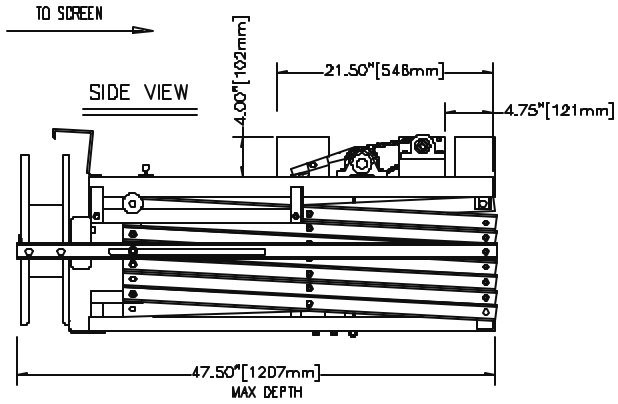


Figure 2b. (Side View)- SVS-15, 18,20,22

- Preliminary measurements should also be made to layout the orientation of the projector to the screen and projector to lift. If the projector lens if offset, the lift position must be offset accordingly to align the lift and the projector with the center of the screen.

3 . LIFT SUPPORTING STRUCTURE:

The 7 Series Lift can be mounted from four ½" threaded rods spaced at **34.75" Wide (883 mm) x 36" Deep (914 mm)** -as shown in figure 3. The threaded rods must be supported by a rigid structure and should not extend more than 2' (0.6m). If the length of the rods exceed 2' (from the support structure to the lift's top mounting holes), cross bracing should be installed between the rods to increase the stability of the installation **-see figure 4.**

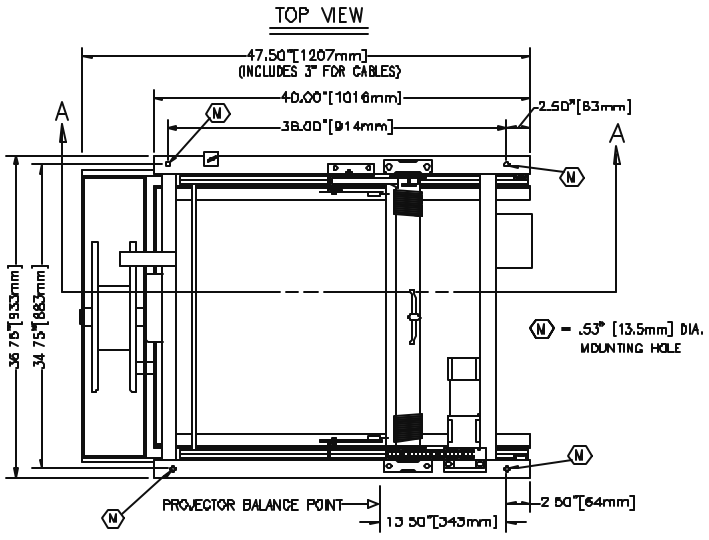


Figure 3 -*Lift shown with cable retractor.*

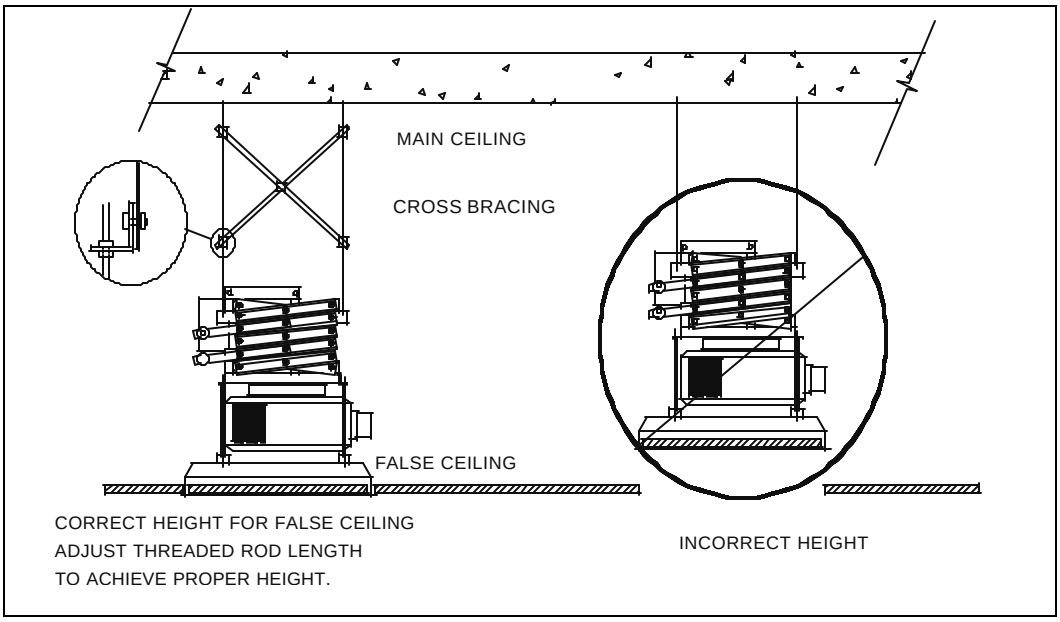


Figure 4.

If ceiling clearance allows, an "X-Y" or a cross-supporting structure is strongly suggested (as shown in two following suggested supporting structures). This will allow front-to-back or side-to-side adjustments if the lift is found to still be slightly offset with the screen once it has been installed.

SVS 7 SERIES LIFT MOUNTING ON EXISTING BEAMS

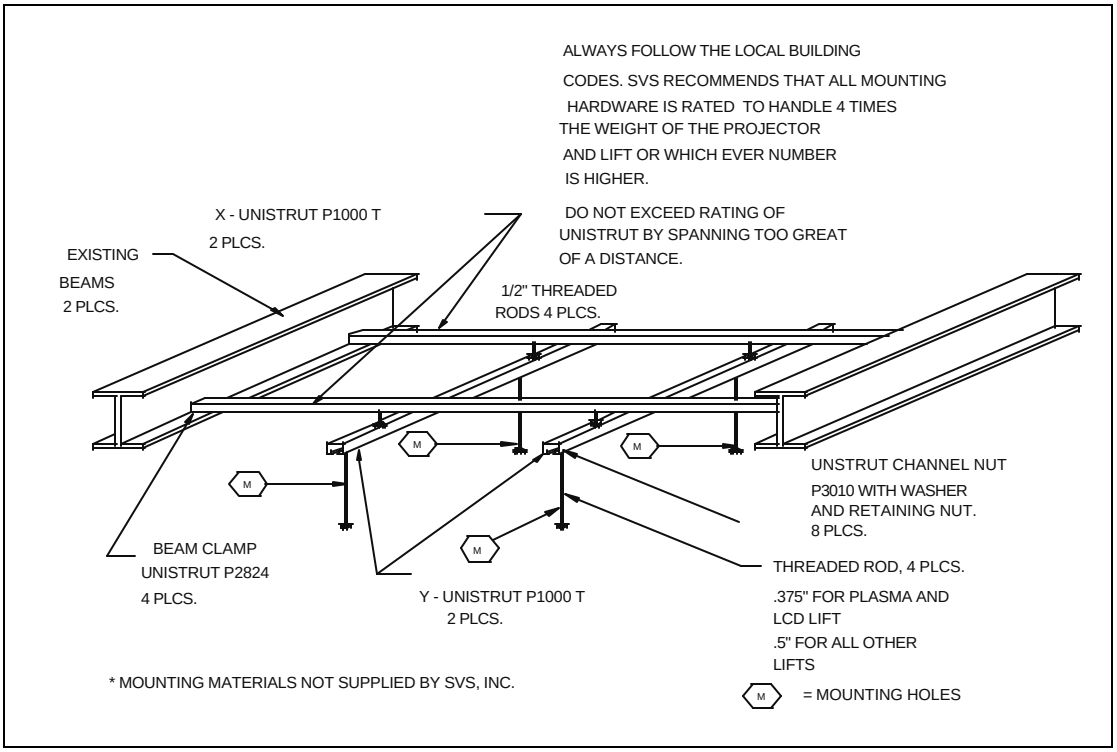


Figure 5a.

SVS 7 SERIES LIFT MOUNTING ON A FLAT CEILING

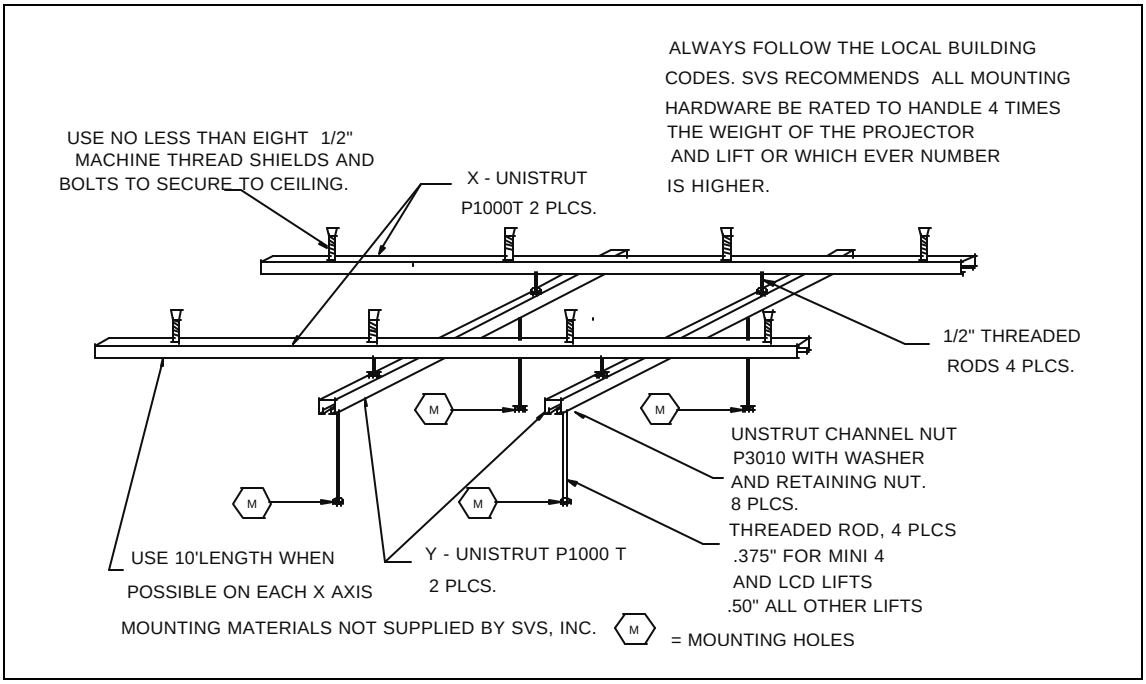

ALWAYS FOLLOW THE LOCAL BUILDING CODES. SVS RECOMMENDS ALL MOUNTING HARDWARE BE RATED TO HANDLE 4 TIMES THE WEIGHT OF THE PROJECTOR AND LIFT OR WHICH EVER NUMBER IS HIGHER.
USE NO LESS THAN EIGHT 1/2" MACHINE THREAD SHIELDS AND BOLTS TO SECURE TO CEILING.
X - UNISTRUT P1000T 2 PLCS.
1/2" THREADED RODS 4 PLCS.
M
UNSTRUT CHANNEL NUT P3010 WITH WASHER AND RETAINING NUT. 8 PLCS.
THREADED ROD, 4 PLCS .375" FOR MINI 4 AND LCD LIFTS .50" ALL OTHER LIFTS
USE 10'LENGTH WHEN POSSIBLE ON EACH X AXIS
Y - UNISTRUT P1000 T 2 PLCS.
MOUNTING MATERIALS NOT SUPPLIED BY SVS, INC.
= MOUNTING HOLES

Figure 5b.

Important note for concrete ceiling installations: when attaching the lift to a flat ceiling, SVS suggests two (2) pieces of #P1000T Unistrut (approx. 10' long -3.04 m), to be installed on the ceiling first. Proper spacing between the 2 pieces will be based on the distance between the top four (4) mounting holes of the lift (as shown in Figure 1) .

You should use at least four (4) ½" bolts and anchors evenly spaced our on <u>each piece</u> of Unistrut to distribute the weight of the supporting structure. Attach ½" threaded rods to the Unistrut, using Unistrut #P3010- ½"" channel nuts in the channel, along with a locking washer and nut below channel to lock into place.

<u>IMPORTANT: IF A #2 PLENUM SHROUD OR A #12 DECORATIVE COVER ARE TO BE INSTALLED WITH THE SVS 7 LIFT. PLEASE READ THEIR INSTALLATION INSTRUCTION BEFORE PROCEEDING. THE SUPPORTING STRUCTURE SHOULD ALSO ALLOW ENOUGH SPACE TO INSTALL THE MOUNTING HARDWARE OF THE DECORATIVE COVER AND THE PLENUM SHROUD.</u>

4. LIFT INSTALLATION:

a. Preparation:

1. The lift is shipped in a wood crate. Remove the Philips screws from the top lid.
2. Unbolt the lift from the bottom panel of the crate to remove the lift out of the crate.
3. The warranty information and the low voltage controller are located in the white box.

b. Installing the lift in the ceiling:

1. Raise the lift, insert it into the ceiling and line up the four (4) mounting holes of the top frame to the ½" threaded rods of the supporting structure. Make sure that there is a top nut and a flat washer before the lift is mounted -see figure 6. Once the lift's top frame has been inserted, add a ½" hexnut to each threaded rod. Always leave top nut loose to allow adjustments until the lift is leveled.

2. Secure the lift to the threaded rods.

3. Check that the top frame of the lift is leveled from front-to-back and side-to-side.

4. Secure the top nuts. Do not over tighten the fasteners before the lift is leveled as it could distort the top frame.

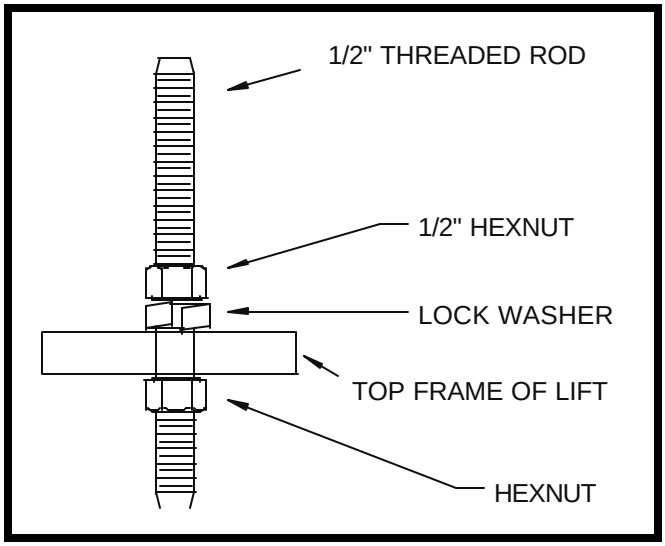


Figure 6.

5. If Power Sensor is used, please refer to the power sensor instructions, otherwise, plug in the 12 pin connector of the low voltage controller (the Key Switch Control Box) into the 12 pin receptor of the grey electrical box, which is supplied with the lift and shipped in the white box located underneath the lid of the shipping crate.

6. Remove the four (4) shipping Blocks from the lift. Never remove the blocks until the lift is properly installed in the ceiling.

7. Make sure that cables are out of the way of operation.

8. Before lowering the lift, you should have some weight attached to the bottom of the lift in order to keep the cables tight until the projector is mounted. Both cables are placed on the drum so that they start unwinding from the inside to the outside of the drum. They are vertical to the eye bolts in the closed position and slightly angled toward the outside of the drum to avoid friction/rubbing with the previous cable loop.

To avoid cable spill:

- Do not push the bottom frame upward once the lift has been installed.

- Make sure that there is no obstructions in the lift's path. If the bottom frame lowers onto a chair, t able or any other object, this will cause the cables to slack and spill over the drum.

5. CEILING CLOSURE INSTALLATION – Please refer to installation instructions included with the #1 Ceiling Closure. It is the self-aligning closure system installed underneath the projector and used to conceal the ceiling hole when the lift and projector are raised in the ceiling. It is attached to the four (4) mounting holes of the lift's bottom frame with threaded rods.

6. ELECTRICAL WIRING AND LIFT CONTROL:

Electrical Connections should be made at this time. The 7 Series lift is controlled with a low voltage 24v/AC controller called the Key Switch Control Box. This controller can be easily connected to external controllers like Crestron, AMX etc.

SVS WALL PLATE

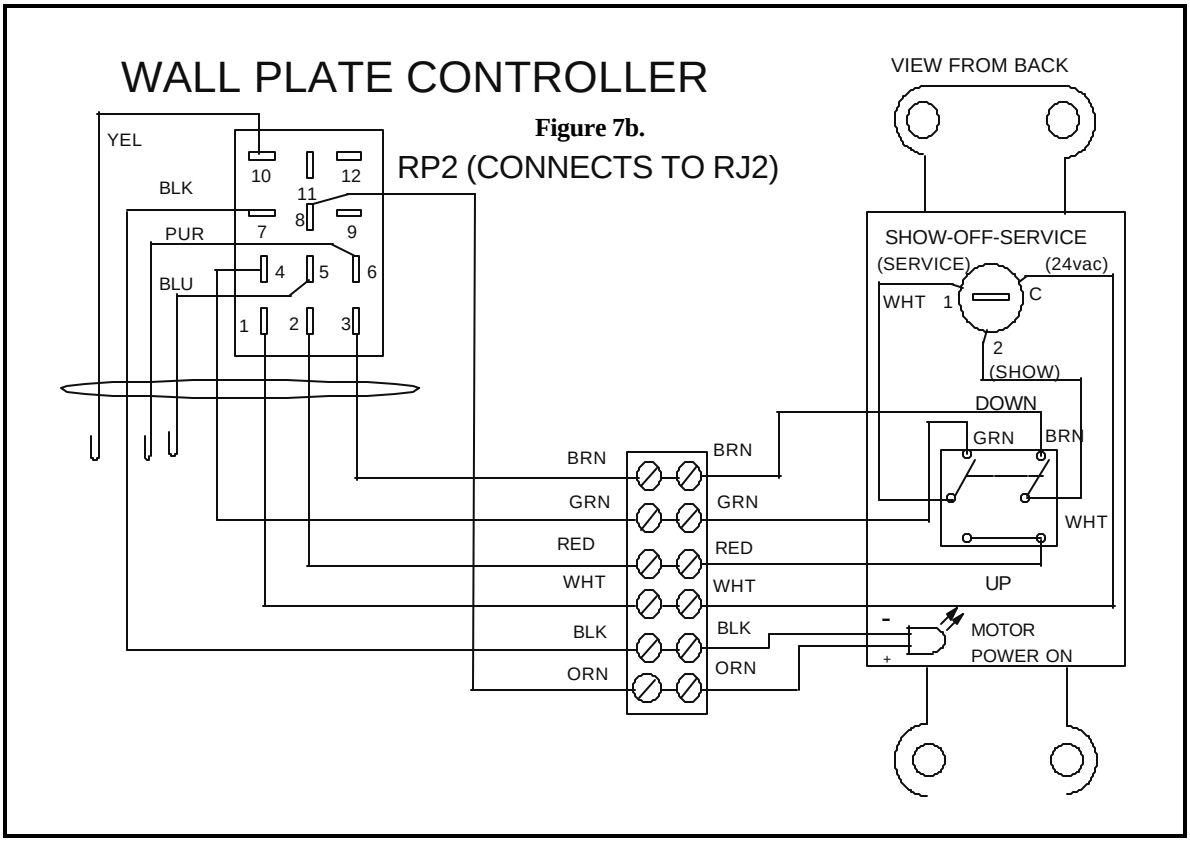


Figure 7.

How to use the low voltage controller:

a. To lower the lift to the show position, turn the keyswitch to the "show" position and press the toggle down. The lift will stop once the roller compresses the show microswitch. The service mode is used to bypass the adjusted show position and to set the lift in a service mode, turn the keyswitch to the "service" position and press the toggle switch down. When the lift reaches its down limits, the lift will stop.

b. To raise the lift back to a storage position, turn the keyswitch to "service" and press the toggle switch up. The lift will stop once its top frame compresses the up limit switches.

Note: The "up" switch works in both "service" and "show" position on the key switch.

Important: when the lift is set in a service mode, the lift will lower until it has reached its down limit switches. The toggle switch on the control plate needs to be pressed at all times to activate the lift. It is designed as a safety feature (the lift can be stopped at any time). The key is an extra precaution as well: when removed, the lift is secured. If an external controller is use, please make sure that no object is standing in the lift path as it lowers to a service position.

LIFT SPECIFICATIONS		
	USA	**INTERNATIONAL**
VOLTAGE	110V/60HZ	220V/50HZ
LOW VOLTAGE CONTROLLER	24v/ac	24v/ac.
CURRENT DRAW	2.3 amps	2.3 amps/1.2 amps
MATERIAL	Steel/Aluminum	Steel/Aluminum

Power Requirements: 110v/50-60hz -220v/50-60hz

Low Voltage Controller: Supplied with the lift. 12 pin connector plug. 75' of Cable (22 g./9 conductor).

WHEN USING A TOUCH SCREEN CONTROLLER:

If an external controller is to be used (AMX, Crestron), please refer to the following wiring instructions **-see figure 8.**

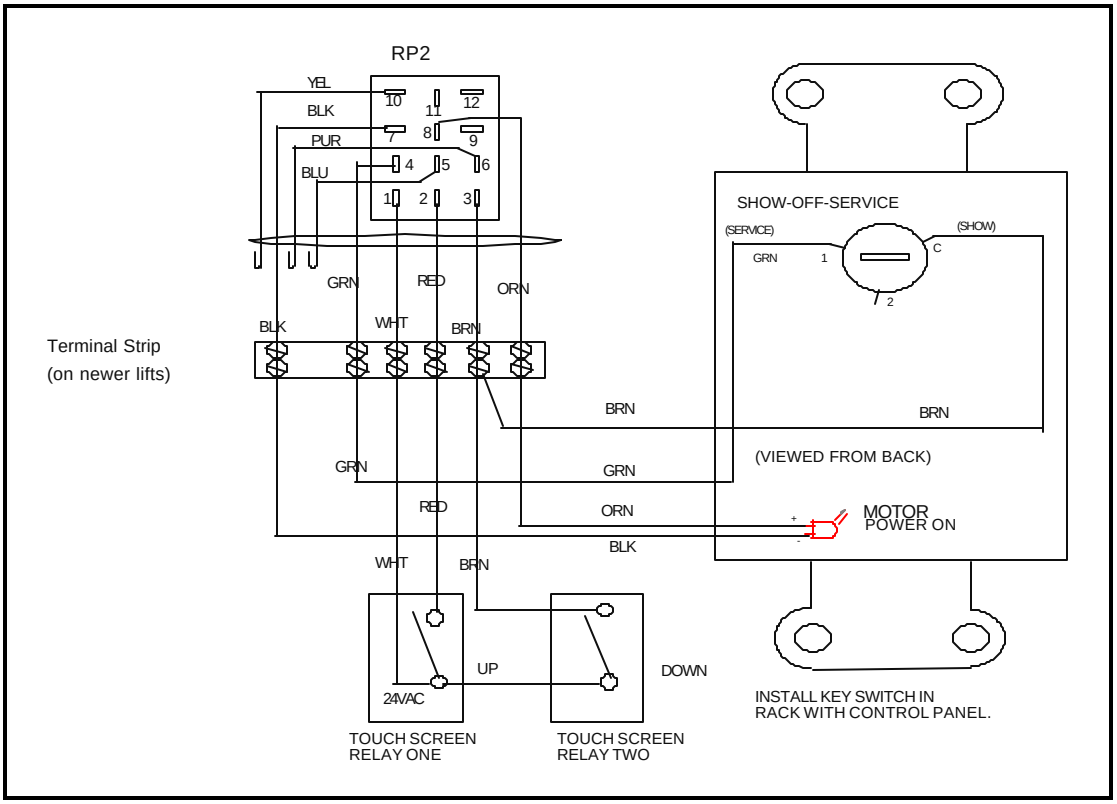
INSTRUCTIONS:

- Program a release of relays to stop on up and down positions.

- Program a time out after the normal run time, 1 or 2 seconds max.

1. Program an exclusive lockout on up and down so both positions cannot be activated at the same time.

2. Hold relays on to move the lift and release relays to stop the lift -always time out or release relay after normal use. IMPORTANT: Never leave voltage on the up and down. Always release voltage immediately after the travel time has been achieved.



Wiring using Touch Screen Controller (Figure 8).

IF USING ANY OTHER SYSTEMS, PLEASE CONTACT SVS FOR PROPER WIRING TO AVOID UNSAFE OPERATIONS.

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7. MOUNTING THE PROJECTOR:

After checking the lift operation and all clearances, the projector can be installed. The projector can be mounted in two ways: inverted or platform mounted.

- The projector can be attached to the lift by using a #9 Mounting Bracket, which is the actual connecting hardware between the projector and the lift. The base box of the #9 mounting bracket will need to be bolted to the lift. On the SVS 7 lift, the mount will be secured to the "U" shape cross member (saddle of the lift). The mount base should be centered side to side with the lift frame.

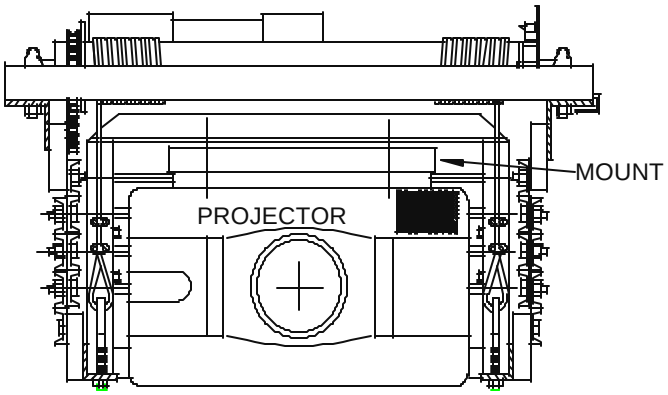

Figure 9.

- If the projector is non-invertible, it can be placed on a SVS #13 platform (metal shelf used to support projector).

Note: All weight attached to the lift must be centered between the cables. Balance point of the projector should be placed in line with cables with +/- 1" of difference.

8. CABLE MANAGEMENT:

<u>- For SVS 7-9 Lift, SVS 7-11 Lift, SVS 7-13 Lift:</u>

These lifts feature cable retainers installed on the scissor extensions in the rear of the lift. These retainers are used to keep cables and other cords securely out of the way during operation. It is not suggested to attach the cables to the scissors of the lift as they could get repeatedly pinched when the lift raises and lowers. To keep projector cords away from scissors, please attach cords as demonstrated in **figure 10a.**

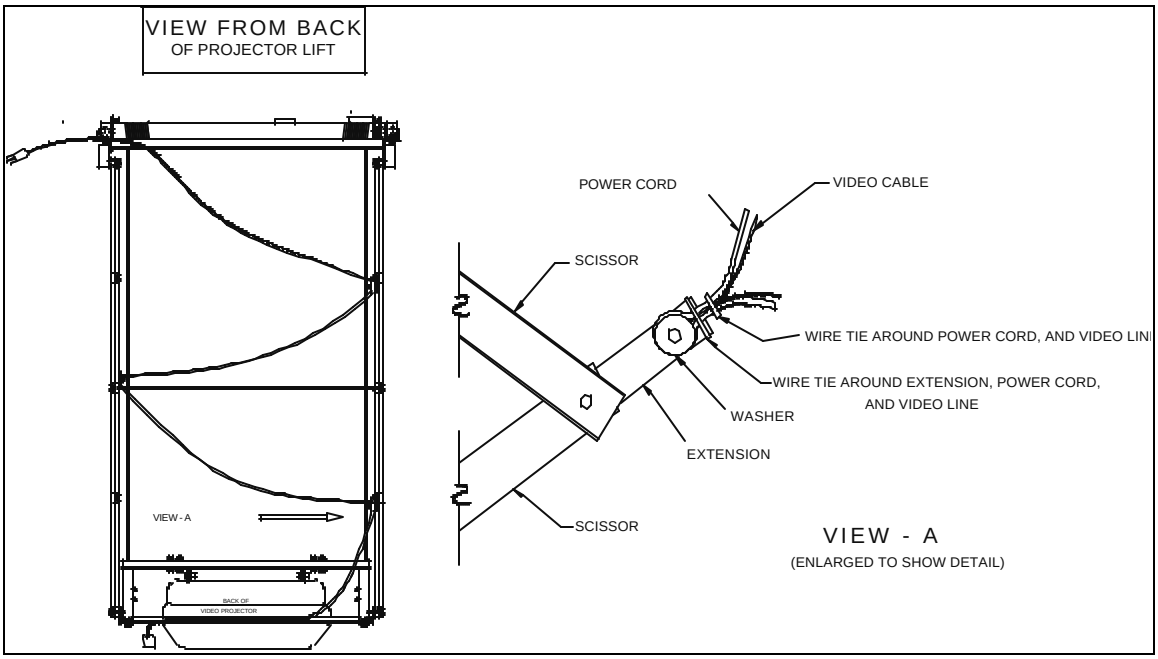

Figure 10a.

- For SVS 7-15 Lift, SVS 7-18 Lift, SVS 7-20 Lift & SVS 7-22 Lift:

These lifts feature a spring loaded cable retractor installed on the scissor extensions in the rear of the lift. This lift features a automatic cable retractor used to keep the video cables away from the scissors during operation. This retractor is spring loaded and automatically retracts as lift ascends or descends. **figure 10b.**

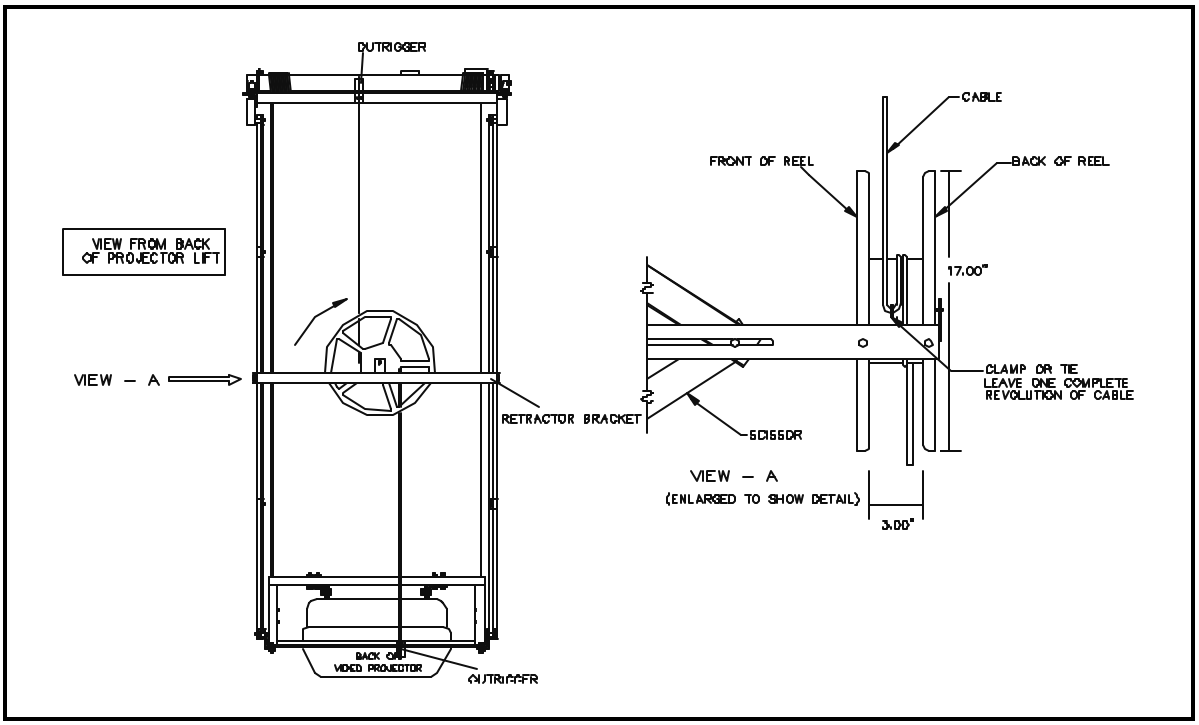

Figure 10b.

Instructions:

1. Lower the lift down to its maximum down position
2. Wind reel **clockwise** to the followin specifications:

   - For SVS 7-15, SVS 7-18 and SVS 7-20 lifts, wind 6 complete turns.

   - For SVS 7-22 lift, wind 8 complete turns.
3. Lock in this position by placing rods or long screwdriver between reel gaps next to retractor bracket. This will stop th reel from free wheeling.
4. Clamp your cable securely at the top frame of the lift, using out riggers.
5. Attach upper half of cable to reel between two of the 4 holes with 3/16" tie wraps. Leave wrap semi-loose in case adjustment is needed
6. Make one and one half tuns around the reel **counter clockwise.** Lock cable in the same way as previous step, to the remaining two holes (180 degrees from first two holes used).
7. Clamp cable securely to lower outrigger on bottom frame -same as #4 step.
8. Run lift up and down to check slak in cable. Cable will be slacked at the top of the lift when in a full up positionl, as it will equally be slacked in the full down down position.

   Note: the cable retractor is located at the center of the scissors, but due to uneven amounts of scissors and opening time of scissors, there can be slack either at the top or bottom at various positions as the lift lowers. To accommodate the slack, the clamping on the reel point can be adjusted aftertracking up and down. If the slack is adjusted correctly, the cable will be more even when in the up and down position, with slack occurring only in the middle position.
9. Wheb proper position is achieved, you can then securely tighten wire tie wraps.

9. SETTING THE SHOW POSITION:

The show position is adjusted by loosening the thumb screw on the show microswitch bracket, located on the upper motor frame -as seen in figure 11:

a. Operate the lift in a service mode and lower the lift to the desired show position.

b. Loosen the thumb screw and slide the show microswitch along the roller guide until it touches the larger retainer washer (as you position the switch over the roller, you should hear a slight click when the microswitch is compressed). Make sure that the microswitch is not positioned too close to the washer because it must pass over it when the lift lowers to a service position.

c. The show position is now set. Raise the lift back to a closed position, turn the key switch to the "show" position and press the toggle down. The show position is adjustable with an accuracy of +/-1/8" (0.32 cm).

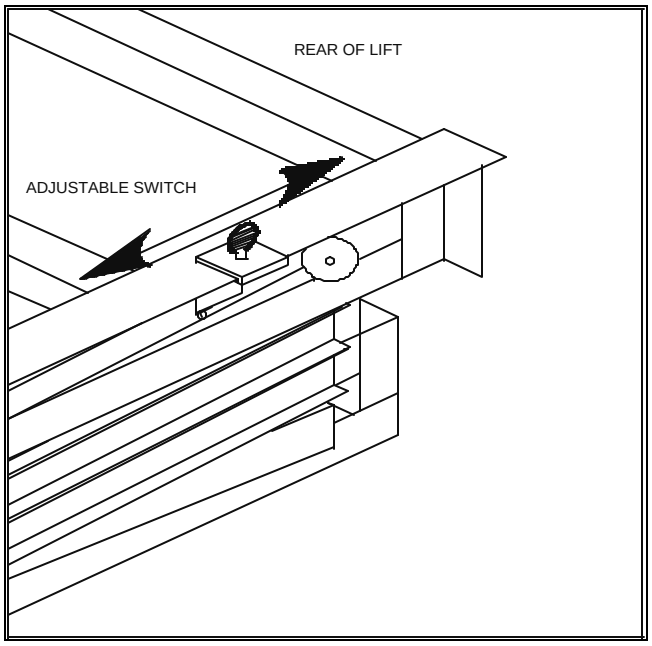

Figure 11.

10. MAINTENANCE AND ADJUSTEMENTS

- Inspect the lift occasionally for any looseness of bolts, check cables and clamps. Pillow block bearings are pre-lubricated and motor does not need attention. If magnetic brake does not hold properly, it must be replaced immediately.
- Level corrections are to be made (with projector mounted) after confirming that the cable is packed tightly and is straight on the drum.
- Position a level across the front of the projector. Fine alignment is done by adjusting nuts on the bottom of the eye bolts. Track up and down until satisfactory alignment is achieved.
- For projectors mounted within the ceiling and lowered to a viewing position, level adjustments must be made at the viewing level.
- After adjustments are completed, check all bolts and clamps for tightness.
- Check drum lock solenoid occasionally – see if arm raises during down travel – all other times it stays in a locked position. If the solenoid does not pull up, the microswitch will not start motor in the down position. Check the centrifugal cam located on the drum stop block. It should be able to move freely and will drop when it reaches the top of the drum, this avoiding contacting the arm of the drum lock. If drum rotates fast, the cam will lock the arm after the first rotation.
- All scissor bolts are adjusted for no slack, but must not be too tight. To adjust, tighten to approximately 151 Lbs Torque, then back of 1/8". These bolts have nylon locking nuts and should stay at this position.

SVS 7 SERIES LIFT Warranty

SVS provides a limited warranty on all products to cover failures due to defects in materials or workmanship which occur during normal use. This limited warranty does not cover failures which result from accident, misuse, abuse, neglect, mishandling, misapplication, alteration, faulty installation, modification or service by anyone other than a factory authorized person or company. Specific product warranties are as follows:

A 5 year parts and 90 day factory labor warranty applies to the following SVS products:

- All scissor style lift models (does not include LCD-1, Lite Lift and QC Lift)
- Acc. #4 Power Sensor
- Acc. #5 Power Sensor with Screen Control
- Acc. #7 Cable Retractor
- Acc. #11 Extra Show Position
- Acc. #14 Floor Access Motor Control
- Acc. #15- 12 Volt trigger

A 1 year parts and 90 day factory warranty applies to the following SVS products:

- SVS LCD-1 Lifts (S and L models)
- Acc. #1 Ceiling Closure
- Acc. #2 Plenum Shroud
- Acc. #9 Mount
- Acc. #10 Dual Stack Mount
- Acc. #13 and 13R platforms

A 60 day factory labor warranty applies to:

- Acc. #12 Decorative Cover

A Return Material Authorization (RMA) number must be received from SVS prior to the return of any product. Products returned from SVS must be shipped adequately insured with freight prepaid and the RMA number clearly noted on the shipping label. Items received freight collect or without RMA numbers clearly noted will be refused. Lift model, serial number and proof of original purchase date may be required before warrant performance is rendered.

_____ _____Cut-Here_____

WARRANTY CARD

CUSTOMER NAME _____
ADDRESS _____
CITY_____ ST_____ ZIP _____
PHONE _____

PURCHASED FROM _____
DEALER NAME _____
ADDRESS _____
CITY _____ ST _____ ZIP _____
PHONE _____
COUTRY _____

SERIAL #_____
MODEL # ___SVS 7-_____
DATE PURCHASED _____
DATE INSTALLED _____

SEND TO: **SVS, INC**
2513 JENKS AVENUE
PANAMA CITY, FL 32405

PHONE: **850-522-4747**
FAX: **850-522-4739**

CARD MUST BE SENT IN WITHIN 10 DAYS FROM DATE OF INVOICE